

SIGNALING AND INTERLOCKING ON THE NORTH WESTERN TERMINAL IN CHICAGO.

On Sunday, June 4, the new passenger terminal of the Chicago & Northwestern in Chicago was put in service. During several weeks previous to the opening of the terminal the interlocking



Fig. 1. The Lake Street Tower.

plants, which are included in the installation, had been in operation handling a large number of instruction trains which were run in and out of the terminal for the benefit of both the



Fig. 2. Looking North from Lake Street.

trainmen and the signalmen who are now operating the big plants. On Sundays there were a sufficient number of these instruction trains so that the number of movements handled

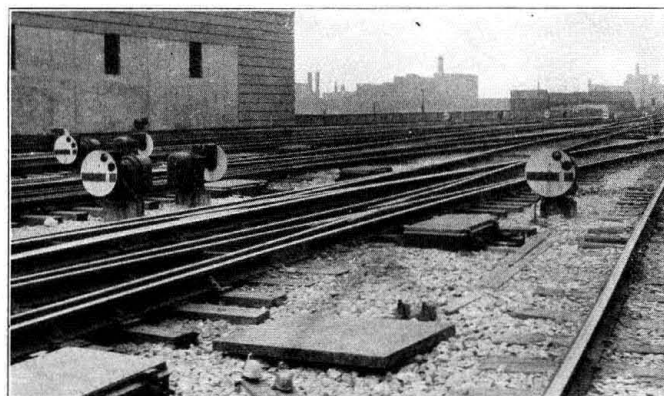


Fig. 3. Showing Specially Designed Dwarf Signals.

by some of the plants in getting them in and out of the station was larger than those necessitated by regular train service at the present time, and probably for some time to come.

The track layout of the terminal and the two approaches and the location of the five interlocking plants are shown in Fig. 6. The Lake street plant controls the entrance to the new station. It is an all-electric machine of 171 working levers in a 212-

lever frame. There are 67 levers for dwarf signals, 29 levers for switches, 46 for double-slip switches, 23 for movable-point frogs, and 6 traffic levers. Fig. 1 shows the Lake street tower from the track side.

The Clinton street plant controls the junction of the north and west approaches. It has an all-electric machine of 155 working levers in a 168-lever frame. There are 29 levers for high signals, 33 for dwarf, 33 for derails, 26 for switches, 18 for double-slip switches and movable-point frogs, and 14 traffic levers.

The Carpenter street plant controls the entrance to the Erie street coach yard from the north approach. It has a machine of 61 working levers in a 76-lever frame. There are 8 levers for high signals, 15 for dwarfs, 20 for derails and switches, and 8 for double-slip switches and bars, 4 for movable-point frogs, and 6 for traffic levers. The Division street plant controls the junction of the north approach with the Wisconsin division tracks. It has 12 levers for high signals, 21 for dwarfs, 25 for switches, 26 for double-slip switches, movable-point frogs, and derails, and 6 traffic levers, making 90 working levers in a 120-lever frame.

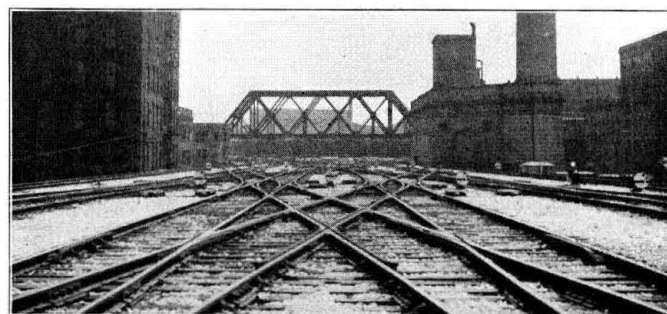


Fig. 4. The Throat of the Terminal, Looking Toward the Station.

The Noble street interlocking governs the junction of the west approach and the Galena division, and has 55 working levers in an 80-lever frame. There are 10 levers for high signals, 11 for dwarfs, 11 for derails, 19 for switches, double-slip switches and movable-point frogs, and 4 traffic levers.

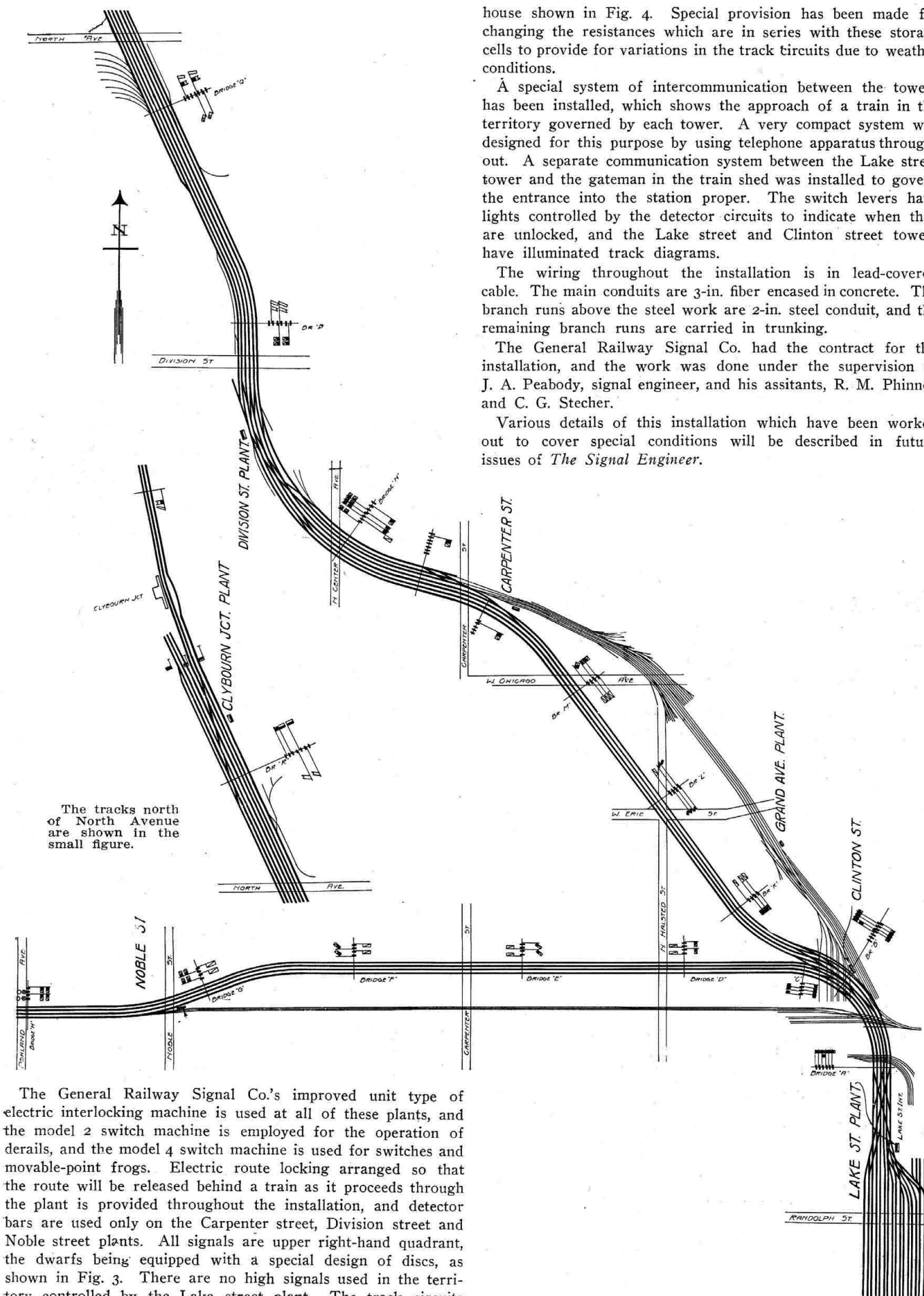
The traffic levers mentioned above are levers which are used to lock up the routes between the plants. They are normally set so as to lock the route in the direction in which traffic is operated over that route, but when occasion demands the two corresponding traffic levers in adjacent towers governing the route



Fig. 5. Clinton Street Tower, Showing Signal Bridges.

between these towers may be reversed, allowing traffic to flow in the opposite direction and preventing movements from being made that will conflict with this traffic.

The total number of operated units in the new terminal is as follows: Lake street, 382; Clinton street, 244; Carpenter street, 146; Division street, 229; Noble street, 131; making a grand total of 1,132 operated units.



The General Railway Signal Co.'s improved unit type of electric interlocking machine is used at all of these plants, and the model 2 switch machine is employed for the operation of derails, and the model 4 switch machine is used for switches and movable-point frogs. Electric route locking arranged so that the route will be released behind a train as it proceeds through the plant is provided throughout the installation, and detector bars are used only on the Carpenter street, Division street and Noble street plants. All signals are upper right-hand quadrant, the dwarfs being equipped with a special design of discs, as shown in Fig. 3. There are no high signals used in the territory controlled by the Lake street plant. The track circuits are operated from storage batteries charged by motor-generator sets in the towers, the power being supplied from the power-

house shown in Fig. 4. Special provision has been made for changing the resistances which are in series with these storage cells to provide for variations in the track circuits due to weather conditions.

A special system of intercommunication between the towers has been installed, which shows the approach of a train in the territory governed by each tower. A very compact system was designed for this purpose by using telephone apparatus throughout. A separate communication system between the Lake street tower and the gateman in the train shed was installed to govern the entrance into the station proper. The switch levers have lights controlled by the detector circuits to indicate when they are unlocked, and the Lake street and Clinton street towers have illuminated track diagrams.

The wiring throughout the installation is in lead-covered cable. The main conduits are 3-in. fiber encased in concrete. The branch runs above the steel work are 2-in. steel conduit, and the remaining branch runs are carried in trunking.

The General Railway Signal Co. had the contract for the installation, and the work was done under the supervision of J. A. Peabody, signal engineer, and his assistants, R. M. Phinney and C. G. Stecher.

Various details of this installation which have been worked out to cover special conditions will be described in future issues of *The Signal Engineer*.

Fig. 6. Showing Track Layout, Approaches, and the Locations of the Interlocking Plants.